



ADVANCED WINDOWS

Turbocharge Windows XP

The longer you use your PC and the more programs you install on it, the slower it's likely to become.

Karl Wright shows you how to tweak and tidy your system to get it running like new again

There's nothing quite like using a brand new PC. The mouse cursor responds to your slightest touch, menus leap into action at the tap of a key and programs load in an instant. As time passes, however, your computer begins to slow down. Software takes ages to start, your system seems to lock up for no reason and you become far more familiar with the Windows hourglass than you ever wanted to be.

This happens because your PC becomes cluttered with junk. Digital clutter takes lots of different forms. Unwanted programs may

have sneaked themselves into your startup folder so that every time you boot Windows they start up and run in the background, eating up system resources. If you've tried out lots of software, the Registry, Windows' database of settings, is probably full of broken and redundant entries. Windows has to check through many of these entries every time it starts, which can slow boot times to a tedious crawl.

If you use the web a lot, your browser's cache will be full of temporary files. In a well-maintained system these can make surfing the web faster. But

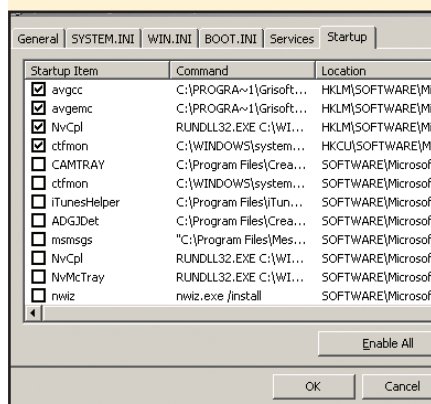
if there are too many such files, your browser has to spend ages looking through them to find out if the page it wants is stored on the hard disk. This slows down your browser and makes using the web a chore.

In this month's *Advanced Windows* we'll tell you how to fix these problems and show you several other ways to speed up Windows, from the time you boot up your PC to the time you shut back down again. Once we've finished, you'll have a healthy and tidy system that runs almost as new and, in some cases, perhaps even better.

CLEAR OUT THE STARTUP FOLDER

One of the easiest ways to make Windows start up more quickly is to prevent unnecessary programs loading when you boot your PC. When you install a program it often configures itself, or a program it uses, to start automatically whenever you boot your system. You have to wait for all these programs to start up before you can use Windows, and if there are lots of them, this can take a long time.

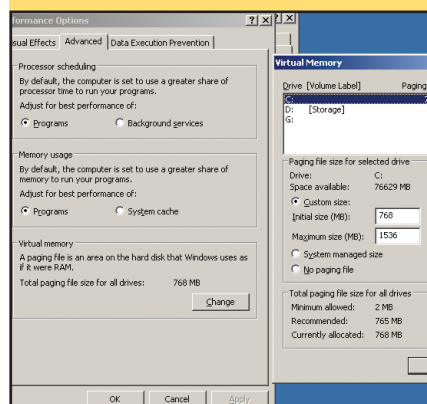
To stop this happening, use the Run command on the Start menu and type msconfig. This starts the System Configuration Utility. In the Startup tab you will see a list of the programs that launch themselves automatically whenever Windows starts. Look through this list and remove the ticks from boxes next to entries for any programs you don't need to have running all the time. See www.pacs-portal.co.uk for guidance. Make sure you don't disable your virus checker, your firewall and any other vital security services.



DEFRAGMENT THE PAGE FILE

Whenever your PC finds that it has insufficient memory to work with all your data, it uses a dedicated portion of the hard disk as virtual memory. It creates a paging file, usually on the C: drive, and uses it as if it were RAM, although it is much slower. One way of improving the paging file's performance is to defragment (defrag) it. You can't do this from within Windows. The only way is to delete the paging file, defrag the entire C: drive and recreate the file on the freshly defragmented disk.

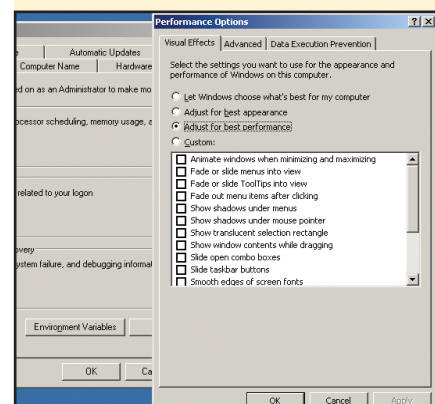
Open Control Panel and double-click on System. Go to the Advanced tab and under Performance click Settings. Go to the Advanced tab in this Window and under Virtual Memory click Change. Make a note of the size and location of your existing paging file, then choose the No paging file option. Reboot your PC, defragment your C: drive using Disk Defragmenter and then recreate the paging file just as it was.



TURN OFF XP'S VISUAL EFFECTS

Windows XP has an extensive repertoire of fancy tricks to make windows, menus and other elements of the operating system look slick. It creates shadows under menus and under your mouse pointer. It animates Windows so that they appear to grow and shrink before your eyes when you maximise or minimise them. It even creates shadows for the icons on your desktop. Unfortunately, if you have a slow computer or one that's already labouring under a heavy software burden, these effects just slow it down.

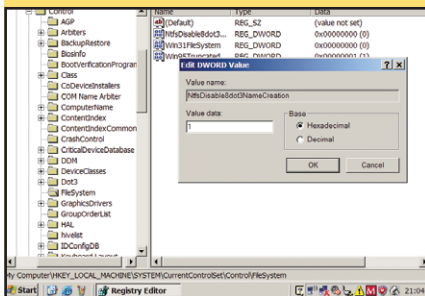
To turn them off, right-click on any empty part of the desktop and choose Properties from the menu that appears. Go to the Appearance tab and click Effects. Untick all the buttons there and click OK. Next, right-click on My Computer and choose Properties. In the Advanced tab, under Performance, click Settings. Go to the Visual Effects tab and select Adjust for best performance, then click OK.





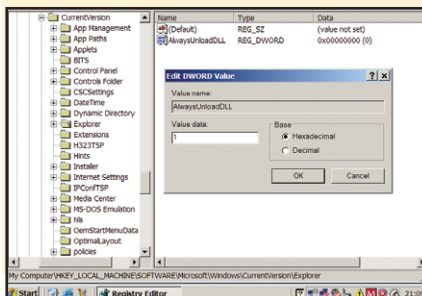
IMPROVE NTFS PERFORMANCE

If your PC runs Windows XP you should use the NTFS file system. It's faster than FAT32 and more secure. However, each time you open a file or folder, NTFS marks it with a time stamp. This enables you to set automated backups to back up files according to the time they were last used. If you don't use this kind of backup, you don't need this feature. By eliminating it you remove an unnecessary task, freeing up Windows' resources. Open the Registry Editor again, go to the HKey_Local_Machine\System\CurrentControlSet\Control\FileSystem key and set NtfsDisable8dot3NameCreation to 1. There may also be a key under FileSystem called DisableNTFSLastAccessUpdate. If so, set that to 1 as well. Time stamps will now be generated only if you modify a file, which will speed up browsing through the hard disk.



UNLOAD DLLS FROM MEMORY

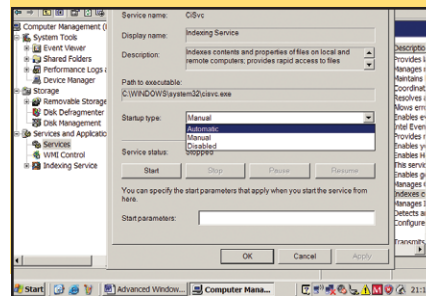
Most programs have associated DLLs. These are files that contain ready-made functions. Programmers use them to speed up program writing and standardise the way software interacts with Windows. When you close a program, Windows doesn't flush the DLLs from its memory. If you use a lot of programs in a session, this can affect performance. To unload surplus DLLs, open the Registry Editor and go to HKey_Local_Machine\Software\Microsoft\Windows\CurrentVersion\Explorer. Click on Explorer and right-click in the right-hand pane of the Registry Editor. Create a new DWORD called AlwaysUnloadDLL and give it the value 1. This will free up RAM, making most programs run more smoothly. The only exception is old 16-bit programs. If you use these a lot and they become unreliable, delete the new key.



POWER UP WINDOWS SEARCH

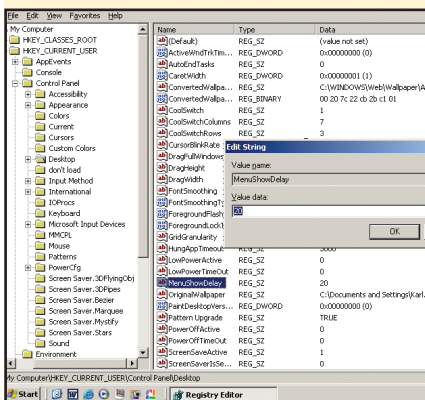
To speed up the Windows search function you need to turn on the Indexing service. Right-click on My Computer and go to Manage. Click on Services and choose Indexing Service in the Management Console's right-hand pane. Set the service to Automatic and click Start. This launches the indexing service, which catalogues all your files using such information as the file contents and any comments in the file properties. This speeds up Windows' search function and makes it more accurate, so if you have a powerful system it's good to enable this option.

If your system is struggling, on the other hand, you can disable the Indexing Service to free up system resources for other programs. For more information on Windows Indexing, see *Advanced Windows*, *Shopper* July 2005.



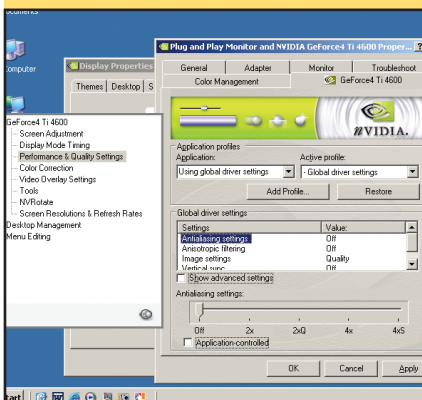
SLASH THE START MENU DELAY

A minor irritation when using Windows XP is that you have to wait for the Start Menu submenus to pop up after clicking. One reason this can take a while is that Windows has a delay built in by default. To fix this we need to change a value in the Registry. Go to Start, Run and type regedit. Navigate to the HKey_Current_User\Control Panel\Desktop\MenuShowDelay key. The key's value will be set to 400. If you replace that with a lower number, the menus will react faster when you click on or move over them. You can even set the value to 0 if you like.



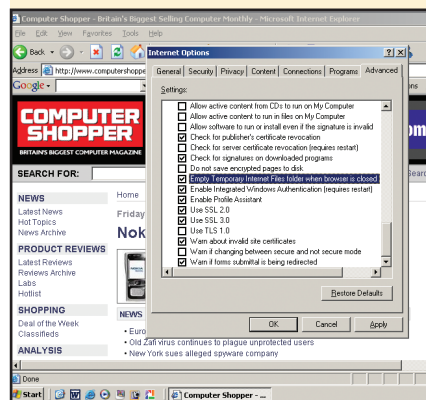
SPEED UP 3D GRAPHICS

The latest games such as Doom 3 and Splinter Cell place great demands on your processor and graphics card. Even a system bought in the past couple of years may have trouble running some of the latest games at a playable frame rate. One way to remedy this is to turn off all the graphics card's fancier features. Open Display in Control Panel, go to Settings and click on Advanced. What you see here depends on which graphics card you have, but there should be a tab called something like 3D Performance. Click this tab and turn off anti-aliasing, anisotropic filtering and vertical sync.



BOOST INTERNET EXPLORER

When you browse the web, Internet Explorer saves a lot of files, including the pages you look at, to the hard disk. These files can slow down your browser because it has to look through them before it can download other parts of the pages from the web. You can clean out these files manually but, unless you do it frequently, it can incapacitate your PC for minutes. To fix this, tell your browser to clear them out automatically. Open Internet Explorer, go to Tools, Internet Options and Advanced. Scroll down and tick the Empty Temporary Internet Files folder when browser is closed box.

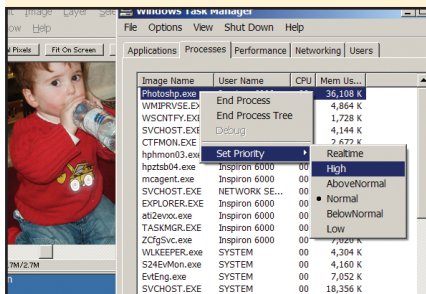




GIVE PROGRAMS MORE POWER

You can assign a given program or process more or less processing power using the Task Manager in Windows XP. Right-click on the taskbar and choose Task Manager. Click the Processes tab and find the process that corresponds to the program you want to endow with more processor power. This can take a while, but it's important to make sure you have the right program. Right-click the process and choose Set Priority, then click High. That program now has privileged access to your PC's processor. This is a good way of making sure that particularly demanding programs such as video-editing software get all the processing time they need.

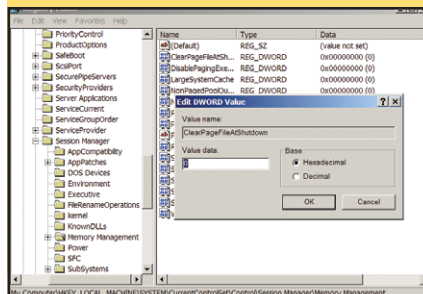
Occasionally this fix can cause instability. If you notice any problems after making this change, simply demote the program back down to the Normal level.



SPEED UP SHUTDOWNS

On some systems Windows is configured to clear the paging file of all the data it contains before it shuts down. It does this for security reasons to make sure that no sensitive information, such as unencrypted passwords, is left on the disk from the last session. For most users, however, this is unlikely to be a concern, and clearing the paging file can significantly slow the shutdown process.

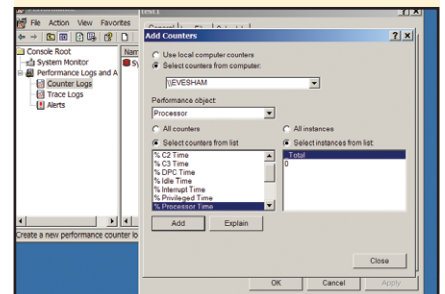
To disable this feature open the Registry Editor once again and go to HKey_Local_Machine\System\CurrentControlSet\Control\Session Manager\Memory Management. In the right-hand pane of RegEdit click on the key ClearPageFileAtShutdown and set its value to 0. This will stop Windows clearing the paging file when it shuts down, and should result in a faster shutdown.



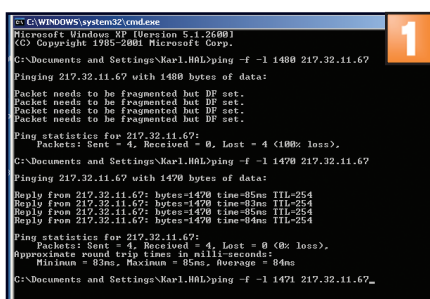
MONITOR SYSTEM PERFORMANCE

You can monitor Windows' performance with the Performance Console. Go to Start, Run and enter perfmon. When the Performance Console appears, click System Monitor in the left-hand pane to see a graph of your current processor, memory and disk usage. Click Performance Logs and Alerts, then right-click Counter Logs and choose New Log Settings. Give your log a name and tell it which variables you want to monitor using Add Counters.

Right-click on Trace Log and create a new log. In the right-hand pane, double-click on the Trace Log you've created. Choose Events logged by system providers, tick all the boxes in the tab and click OK. Counter Log will now monitor your PC's performance, while Trace Log monitors specific aspects, such as network traffic and disk input and output when a serious error occurs.

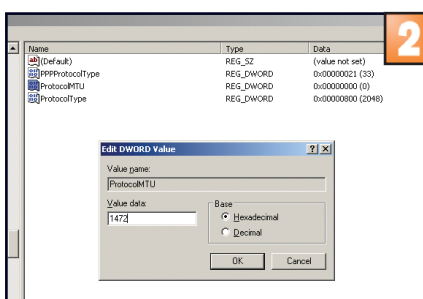


HOW TO... SPEED UP BROADBAND



When sending data over the internet, Windows splits the information into small pieces called packets. The default size of these packets, known as the Maximum Transfer Unit (MTU), is 1,480 bytes. If this is too large for your broadband provider, it splits up the packets, which can slow down your connection. Fixing this problem is simple, if rather time consuming.

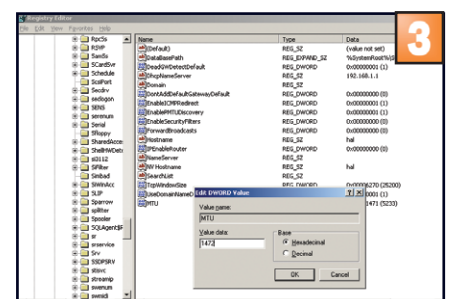
1 Load your router's administration page in a web browser and find out your ISP's gateway IP address. Open the Windows Command Prompt from the Start menu, Accessories. Use the ping command to ping the gateway. Use the -l parameter to set the ping



packet's size and the -f parameter to stop the packet fragmenting. So if your gateway's IP address were 256.192.1.64 and you wanted the packets to be 1,480 bytes in size the command would be ping -f -l 1480 256.192.1.64.

If the packet is too big you'll see the message "Packet needs to be fragmented but DF set". Keep trying with different packet sizes until you find the largest size that doesn't cause this error.

2 We've found that our optimum MTU is 1,472. To set this as the default packet size in Windows, run RegEdit and go to the key HKey_Local_Machine\System\CurrentControlSet\Services\Ndiswan\Parameters. Right-click in the



right-hand pane and choose New DWORD value. Call the DWORD ProtocolType and give it the value 800. Create two more DWORDs, PPPProtocolType with the value 21 and ProtocolMTU with a value corresponding to the optimum size of your MTU.

3 Finally, still in RegEdit, go to HKey_Local_Machine\System\CurrentControlSet\Services\Tcpip\Parameters. Create a new DWORD called MTU and give it a value corresponding to the optimum value of your MTU, which is 1,472 in our case. Your system should now work in harmony with your ISP's settings. If your broadband connection does not become faster, simply delete the keys you have added. **CS**